

Interface standard.³³ For example, because the processing power required to run the interactive multimedia applications on the horizon will exceed what could be incorporated into TV sets at a reasonable cost, newer broadband terminals will be needed to provide these services to consumers.³⁴ Cable operators will increasingly rely on a family of broadband terminals to match their hardware investment with the various types of services selected by consumers.

Seen in this light, ¶ 29's proposal to require cable systems to provide all cable services through the Decoder Interface either fails to recognize the implications of this technological disjunction or, worse yet, despite its recognition, nevertheless seeks to impose a moratorium on emerging cable technologies and services in order to prevent the two industries from becoming unsynchronized.

The imposition of a technological moratorium on emerging cable services and technologies is beyond the scope of the

³³ See, e.g., Continental Cablevision Comments at 28 ("As long as there is technological progress, some type of converter will be required to interface today's distribution systems with an aging population of TV receivers and VCRs."); TCI Comments at 1-2; Time Warner Comments at 56-57.

³⁴ Kaleida Labs has recently announced the development of a new computer graphics accelerator chip, called "Malibu," which is intended for use in interactive broadband terminals with PowerPC microprocessors that will make their way into homes by late 1994 or early 1995. Applications crafted using ScriptX, Kaleida's multimedia development language, can be run in this broadband terminal. See Computerworld, December 6, 1993, at 1, 16. See also Daniel Tynan, "Brave New TV: Tune In to 500 Channels of Interactive Television," Electronic Entertainment, January 1994, at 52 (describing the broadband terminals and interactive services currently being developed).

Commission's authority: it would attempt to achieve compatibility at the cost of stifling technological innovation in the cable industry, reducing program diversity, and diminishing consumer choice contrary to overriding congressional, Commission, and executive branch policy objectives. Section 7 of the Communications Act of 1934, as amended, provides: "It shall be the policy of the United States to encourage the provision of new technologies and services to the public."³⁵ Moreover, among the primary policy objectives of the 1992 Cable Act is the congressional desire to "ensure that cable operators continue to expand, where economically justified, their capacity and the programs offered over their cable systems."³⁶

More specifically, any attempt by the Commission to freeze cable technologies and services to ensure compatibility is fundamentally at odds with the statutory provisions of Section 17 which properly anticipate "improvements and changes in cable systems," and which consequently instruct the Commission to

³⁵ 47 U.S.C. § 175.

³⁶ See 1992 Cable Act §§ 2(b)(1)-(3). As Commissioner Duggan has aptly commented on this point:

We are aware, however, that the Act expresses a clear preference for competition, for growth and diversity in programming, and for expanding consumer choice. Those principles are central to the Act, and I am seeking to be faithful to them as we shape our rules.

"Cable, Localism and the Third Stage," Remarks of Commissioner Ervin S. Duggan Before the Sixth Annual Local Programming Seminar National Academy of Cable Programming, March 22, 1993 at 2.

review periodically and, if necessary, modify its compatibility regulations to accommodate these improvements and changes.³⁷

Finally, at a time when the cable industry is poised to contribute significantly to the development of the National Information Infrastructure, the imposition of a moratorium on cable technology is particularly ill-conceived in that it would delay the deployment of important elements of the National Information Infrastructure, as well as prejudice and distort mergers, joint ventures, and other joint activities that are now working to pursue the NII initiative.

Accordingly, to avoid these undesirable results and to comport with congressional intent, the Commission should require that only those cable services existing at the time a particular version of EIA/ANSI 563 is implemented must be delivered through the Decoder Interface. A cable operator which develops a new video service³⁸ or technology after the adoption of a particular version of the Decoder Interface standard that is incompatible with that standard must nevertheless be permitted to deploy this new technology or deliver this new video service to its subscribers despite its inability to do so through the incompatible Decoder Interface connector.

³⁷ 1992 Cable Act § 17(d).

³⁸ GIC does not believe that either ¶ 29, or the 1992 Cable Act, requires the use of the Decoder Interface for signals other than video and ancillary-to-video signals. For example, the Decoder Interface is neither designed nor intended for two-way telephone and data services that might be carried on a cable system, or for compressed digital audio programming.

C. Compatibility Proposals for Cable Systems

1. The NPRM's Proposal to Disallow Cable Operators From Charging for Component Descramblers/Decoders is Contrary to Commission Precedent and Sound Public Policy

The Commission's cable rate regulation policies allow cable operators to charge customers for set-top boxes based on the actual cost to the operator.³⁹ Conversely, the NPRM proposes to require cable operators to provide component descramblers/decoders without a separate charge for the equipment or its installation.⁴⁰ Rather, installation and rental of this equipment would be included as elements of the general cable network whose costs would be recoverable through subscriber revenues from regulated cable services.⁴¹

GIC strongly opposes the proposed rate regulatory treatment of component descramblers/decoders. The disparate treatment of equipment items that perform essentially identical functions is arbitrary and capricious.

Moreover, the proposed policy is fundamentally at odds with substantial Commission precedent. First, as the NPRM notes, the proposed policy contravenes existing Commission rules requiring the unbundling of cable service and equipment rates.⁴² Second, the proposed policy, if adopted, will drive cable operators to

³⁹ See 47 C.F.R. § 76.923.

⁴⁰ NPRM at ¶ 30.

⁴¹ Id. and n. 27.

⁴² See NPRM at ¶ 30, n. 28, and cites therein.

elect cost-of-service regulation rather than benchmark regulation, thereby undermining the Commission's stated preference for the latter and its establishment of cost-of-service regulation as a mere "backstop" to its benchmark framework.⁴³ Third, the proposed regulatory treatment contradicts the Commission policy of requiring cost-causative customers to incur the costs of equipment they use rather than forcing all subscribers to subsidize this equipment use through higher regulated rates.⁴⁴ The Commission's discussion of this policy in its recent tier buy-through order is particularly illuminating in this regard:

Those commenters who addressed the issue of whether or not a cable operator may charge basic only subscribers availing themselves of the buy-through option for the converter necessary to enable them to purchase per channel or per program offerings are unanimous in their belief that operators should be permitted to do so. We agree. To prohibit such charges would be discriminatory to subscribers who exercise their choice to obtain only basic cable service, since their rates would increase if the costs of addressable converters were shared by all subscribers to the systems.⁴⁵

On a more fundamental level, the Commission's proposal represents an inadvisable attempt to conform equipment compatibility regulations to a rate regulatory scheme that is

⁴³ See, e.g., Cable Rate Regulation, Third Report and Order, MM Docket No. 92-266, FCC 93-519 (released November 24, 1993), at ¶ 2.

⁴⁴ Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, Buy-Through Prohibition, 8 FCC Rcd. 2274, at ¶ 23 (1993) 20 (emphasis added) ("Tier Buy-Through Order").

⁴⁵ Id.

anything but well-settled. The Commission's rate regulations could conceivably undergo substantial modification on reconsideration and may ultimately be abrogated either by judicial decision or the emergence of effective competition. In short, in crafting its equipment compatibility rules, the Commission should not take the rate rules as a given, much less attempt to mesh the two regulatory frameworks. A preferable regulatory approach, and one which will achieve the Commission's goal of encouraging consumers to acquire new Decoder Interface-equipped TVs and VCRs⁴⁶ without effecting a confiscatory taking of cable operators' property, is the one recommended by C3AG in its supplemental comments. Specifically, the Commission should

(1) require that all cable companies provide the first decoder in each home for connection to Decoder Interface-equipped TVs and VCRs at no installation charge (in contrast to the installation charge that will ordinarily apply upon installation of a converter/descrambler), (2) require that cable operators charge consumers monthly rentals for set-back decoders and set-top converter/descramblers in proportion to their costs.⁴⁷

Finally, to the extent the Commission's proposed regulatory treatment of component descramblers/decoders is rooted in the desire to encourage cable operators to rebuild their systems with "in the clear" technologies such as interdiction, it is additionally flawed as described in the following section.

⁴⁶ See NPRM at ¶ 30.

⁴⁷ C3AG Supplemental Comments, filed on July 21, 1993, at 11 ("C3AG Supplemental Comments").

2. The NPRM's Preference for "In the Clear" Technologies is Inconsistent with Precedent and Unsupported By This Record

Various proposals in the NPRM are designed to encourage cable operators to implement "in the clear" conditional access technologies. For example, the proposal to disallow charges for component descramblers/decoders is intended to "encourage cable operators to use signal delivery methods that provide all purchased channels simultaneously, in the clear."⁴⁸ Similarly, the proposal to require all video services to be provided through the Decoder Interface is, in part, an indirect attempt to promote these technologies.⁴⁹

While, as a general matter, GIC strongly objects to the Notice's efforts to accord a competitive advantage to vying technologies,⁵⁰ such governmental handicapping is especially inappropriate in this context given the substantial statutory and regulatory precedents and the overwhelming record evidence in this proceeding which clearly favor the use of scrambling as the most effective conditional access technology.

The NPRM's expressed preference for "in the clear" technologies is inconsistent with the Commission's prior decision

⁴⁸ NPRM at ¶ 30.

⁴⁹ See id. at ¶ 29.

⁵⁰ Such hand picking of technologies is questionable given the Commission's inability to predict technological developments. For example, the Commission's perception that "video dial tone" technology would resemble traditional telephone networks rather than traditional cable TV networks has recently been proven incorrect, as PacTel has announced a major rebuild of its telephone networks using cable TV network architecture.

to accord maximum flexibility to cable operators in their selection of signal access control technologies:

The need to comply with the regulatory policies incorporated in the 1992 Cable Act, including the mandatory signal carriage rules, the rate regulation provisions, and the equipment compatibility requirements, along with the benefits associated with the development of new programming services and potential technological developments, make it highly desirable that systems retain the flexibility to alter their channel configurations and signal access control mechanisms. Thus, we do not intend to mandate the continued use of any particular mode of operation.⁵¹

A preference for "in the clear" technologies is similarly at odds with the Commission's longstanding recognition of the benefits of scrambling. For example, after a thorough analysis of scrambling of satellite programming, the Commission correctly concluded that

scrambling has legitimate public interest justifications -- to protect programmers from commercial theft and to allow them to recover compensation from all who view their copyrighted product.⁵²

In addition, the Notice's expressed favoritism for "in the clear" techniques ignores Section 17's directive to balance the benefits of compatibility requirements against (1) the costs of imposing such requirements and (2) "the need for cable operators to protect the integrity of signals . . . against theft or . . .

⁵¹ Tier Buy-Through Order at ¶ 20.

⁵² Inquiry into the Scrambling of Satellite Television Signals by Owners of Home Satellite Dish Antennas, 2 FCC Rcd. 1669, at ¶ 220 (1987). See also Inquiry into the Scrambling of Satellite Television Signals by Owners of Home Satellite Dish Antennas, 3 FCC Rcd. 1202, at ¶ 11 (1988) ("By maintaining the incentives to produce programming, scrambling serves the public interest").

unauthorized reception."⁵³ The record in this proceeding overwhelming demonstrates that the costs of "in the clear" technologies outweigh any compatibility benefits these technologies may produce and that the preferable conditional access method is scrambling. The shortcomings of each "in the clear" security techniques are amply delineated in the record.⁵⁴ While GIC will not repeat these problems here, we emphasize that for the Commission improvidently to influence the use of one or more of these techniques in lieu of scrambling would force cable operators to devote substantial sums of money to install inferior security technologies that will be incompatible with digital video compression. These alternative technologies may serve as attractive complements to addressable scrambling in certain situations, but they are in no way adequate substitutes for it. This will be especially true in the emerging, interactive video realm in which customized packaging of programming will require a signal access control method that can secure and distribute many

⁵³ 1992 Cable Act § 17(A)(c)(1)(B). Section 17(A)(c)(1)(B) is merely the latest manifestation of Congress' longstanding concern for the ability of cable operators to protect their signals. See, e.g., H.R. Rep. No. 934, 98th Cong., 2d Sess. 83 (1984) ("The Committee believes that theft of cable service poses a major threat to the economic viability of cable operators and cable programmers, and creates unfair burdens on cable subscribers who are forced to subsidize the benefits that other individuals are getting by receiving cable service without paying for it").

⁵⁴ See, e.g., Cablevision Comments at 6-7; CATA Comments at 7, 12; Continental Cablevision Comments at 20; Greater Media, Inc, et al. Comments at 4-6; Intermedia Comments at 2, 11-13; NCTA Comments at 14-19, 39; NYC Comments, Appendix A at 20; Scientific Atlanta Comments at 5; Telecable Comments at 11, Appendix C; Time Warner Comments at 17-24, 32-34.

more levels of service and with much greater automation and efficiency than previous systems.⁵⁵ As the C3AG described it:

[W]hile [anti-theft measures such as traps, interdiction, broadband descrambling, and other "in-the-clear" approaches] may have their virtues -- and individual cable operators may find them to be appropriate solutions to their particular needs -- none of them is suitable for universal deployment; each has limitations and characteristics that prevent it from reasonably being prescribed as a mandatory solution to compatibility issues. The Advisory Group recognizes that scrambling and encryption are an important part of providing cable services and will remain an essential part of delivering video signals.⁵⁶

The Commission is not at liberty to ignore the statutory and regulatory precedents cited above and the overwhelming record evidence in this proceeding which clearly single out scrambling

⁵⁵ See Booth American Company Comments at 2; Continental Cablevision Comments at 13; Electronics Technicians Association Comments at 4; Greater Media Comments at 3-4, 6; NCTA Comments at 14; Telecable Corporation Comments, Appendix B at 7-9; Time Warner Comments at 29-31; Zenith Comments at 8.

Indeed, as several commenters -- including EIA -- correctly observe, the 1992 Cable Act itself, by its must carry and tier buy-through provisions, actually places added pressure on cable operators to utilize addressable scrambling to achieve compliance with the Act. See CATA Comments at 16; Continental Cablevision Comments at 16-17; EIA Comments at 36; Electronics Technicians Association Comments at 7; Greater Media Comments at 2; Intermedia Comments at 7-8, 10; Multichannel Communications Services, Inc. Comments at 13; NCTA Comments at 16-19; Scientific Atlanta Comments at 2; Sony Corp Comments at 4; Time Warner Comments at 44-49; Zenith Comments at 3.

⁵⁶ C3AG Supplemental Comments, filed on July 21, 1993 at 7-8. See also "Cable Television: Equipment Compatibility Hearing," attached as Appendix A to Comments of NYC (November, 1991) at 19-20 ("[scrambling] represents state-of-the-art technology in the cable industry. It also represents an important and necessary measure to combat extensive theft of cable service in Manhattan. Other means of fighting theft, including the interdiction technology being tested in several locations around the country, do not yet compare with signal encoding and converter boxes.") (emphasis added).

as the most effective signal access control method. Just as a Commission decision to mandate the use of "in the clear" technologies by cable operators could not withstand judicial scrutiny in light of these precedents and record evidence, the various proposals in the NPRM discussed above which attempt to handicap "in the clear" technologies are equally unsupportable. Accordingly, the Commission should reject its proposals to disallow the recovery of costs for component descramblers/decoders and to require all video signals to be delivered through the Decoder Interface, lest the Commission run afoul of its reasoned decisionmaking obligations.⁵⁷

IV. STANDARDS ISSUES

A. The Imposition of Digital Transmission or Scrambling/Encryption Standards By the Commission Would Undermine Congressional Intent

The NPRM envisions the evaluation and adoption of digital transmission and security standards by the Commission.⁵⁸ While the adoption of such standards may ultimately prove to be worthwhile, GIC notes that the imposition of standards by the Commission would undermine congressional intent.

Section 9 of the House Amendment, which was adopted by the Conference Committee, contained explicit directives to the Commission to "adopt standards ... that are technologically and

⁵⁷ See Mountain States Telephone and Telegraph Co. v. F.C.C., 939 F.2d 1021, 1035 (D.C. Cir. 1991).

⁵⁸ NPRM at ¶ 34.

economically feasible"⁵⁹ and to consider the "costs and benefits of requiring cable operators to adhere to technical standards for scrambling or encryption of video programming"⁶⁰ These explicit directives regarding the adoption of standards, however, were deleted by the Conference Committee, thereby indicating Congress' decision to avoid the imposition of such standards by the Commission.⁶¹ Accordingly, the Commission must heed this clear legislative intent and refrain from imposing digital transmission and security standards on the cable industry.

B. The Commission Should Refrain from Evaluating or Adopting Digital Transmission or Security Standards Until These Technologies Have Matured

In addition to its untenability as a legal matter, the premature evaluation and adoption of digital transmission and security standards should be avoided as a matter of sound public policy. Cable technology is moving at a rapid pace. The recent announcements by cable operators and others to deploy digital video compression and encryption technology within the next two years is but one example of the dynamic changes permeating this industry. In such a rapidly changing technological environment,

⁵⁹ H.R. 4850, 102d Cong. 2d Sess. § 9(e) (1992).

⁶⁰ Id. § 9(c)(2)(A). See also id. § 9(e) ("In determining the feasibility of such standards, the Commission shall take into account the cost and benefit to cable subscribers and purchasers of television receivers of such standards").

⁶¹ See 2A Sutherland Statutory Construction § 48.04, at 325 (5th ed. 1992) ("[W]here the language under question was rejected by the legislature and thus not contained in the statute it provides an indication that the legislature did not want the issue considered").

government standard setting potentially can cause serious disruption. Notably, standardization freezes innovation and the development of new technologies.⁶² Vigorous improvement in cable technologies has occurred in the past decade because this industry has not been encumbered by excessive standardization. In contrast, the telephone industry has seen only a gradual evolution in its technology during this time. Without the burdens of standardization, a cable system may replace its technology every three or four years. In contrast, the standardization process itself takes three to four years.

As Besen and Johnson, who conducted a comprehensive study of compatibility standards and the government's proper role in implementing such standards, aptly conclude on this point:

[T]he government should refrain from attempting to mandate or evaluate standards when the technologies themselves are subject to rapid change. A major reason for the Commission's difficulty in establishing the first color television standard was the fact that competing technologies were undergoing rapid change even during the Commission's deliberations. It is only after the technologies have "settled down" that government action is most likely to be fruitful, as illustrated in the TV stereo case.⁶³

⁶² See, e.g., Stanley M. Besen and Garth Saloner, "The Economics of Telecommunications Standards," in Changing the Rules: Technological Change, International Competition, and Regulation in Communications, 177, 194-95 (Robert W. Crandall and Kenneth Flamm eds., 1989) ("The benefits from standardization may make users of a standardized technology reluctant to switch to a new, and perhaps better, technology because of fear that others, bound together by the benefits of compatibility, will not abandon the old standard").

⁶³ Stanley M. Besen and Leland L. Johnson, "Compatibility Standards, Competition, and Innovation in the Broadcasting Industry," Rand Corporation, November 1986, at 135 ("Rand Compatibility Study").

In short, while standardization may play an important role in future compatibility, it is essential that the standards process not restrain the ability of the cable industry to innovate in the development of new technologies and services. Standardization may be appropriate once digital transmission technologies have matured and there is an industry consensus that standardization is appropriate. If there is no industry consensus, it is a sure sign that standardization is premature.

Thus, GIC strongly urges the Commission to refrain from imposing national digital transmission or security standards on cable providers. No one knows or can adequately predict how this technology will develop; extensive government involvement at this point could inadvertently derail the dramatic progress being made and seriously threaten U.S. competitiveness in the digital video arena. Consequently, the Commission should proceed with extreme caution with respect to the regulation of these emerging digital technologies.

Further, any such standards which are eventually adopted should be developed and recommended by industry standards bodies rather than simply imposed by the Commission. The Commission has been most successful in recent years when it has relied on industry standards bodies to take the lead in developing

Standardization in this context would be further complicated by the fact that various components comprise a digital transmission system including: (1) a modulation technique, (2) an addressability and conditional access method, (3) demultiplexing means to separate the signals compressed into each 6 MHz channel, (4) time domain training signals, and (5) error detection and correction schemes.

standards proposals, subject to review and confirmation by the Commission. As Besen and Johnson describe it:

Perhaps the most important rule for government action is that it should depend heavily on industry evaluations and agreements rather than on in-house evaluations. The difficulties of relying on internal evaluations are well illustrated in the color television case, where the FCC initially picked the wrong technology, and in AM stereo, where its recommendation in favor of Magnavox was rejected by industry. In contrast, situations where government action led to adoption of apparently socially beneficial standards, such as in TV stereo, cellular radio, and in the second color television decision, were all based heavily on industry deliberations and recommendations.⁶⁴

The Commission has pursued such a cautious, rely-on-industry-consortia approach to the adoption of standards in the PCS context where the level of technological dynamism is similarly high. In its most recent PCS Order, for example, the Commission decided that given the rapid technological change inherent in PCS development, a flexible regulatory approach to PCS technical standards was warranted:

[M]ost parties recognize that PCS is at a nascent stage in its development and that imposition of a rigid technical framework at this time may stifle the introduction of important new technology. We agree, and find that the flexible approach toward PCS standards that we are adopting is the most appropriate approach.⁶⁵

The Commission properly decided to rely on industry standard-setting groups to develop and recommend PCS standards for

⁶⁴ Rand Compatibility Study at 134-35.

⁶⁵ PCS Second Report and Order, Gen. Docket 90-314, FCC 93-451 (released October 23, 1993) at ¶ 137.

roaming, interoperability, and other important features.⁶⁶ Especially given the C3AG's expressed intention to form a subcommittee to pursue digital cable transmission standards,⁶⁷ the Commission should pursue a similar strategy in this context.

Finally, should a digital transmission standard be adopted, the Commission will have to grandfather then-existing digital compression systems that may be non-compliant with the standard. By the time a standard can be completed, the cable industry and the satellite video industry sectors will have several years of experience with digital video compression. The equipment may well be in its second or perhaps even third generation. It is likely that some cable systems and some satellite systems, but not all, will be using equipment that complies with the standard. At that time, the Commission will have to weigh the benefits, if any, of requiring non-compliant systems to be replaced. The Commission has always been reasonable in the past about grandfathering existing equipment,⁶⁸ and GIC would expect that

⁶⁶ Id. at ¶ 138.

⁶⁷ C3AG Supplemental Comments at 11-12.

⁶⁸ See, e.g., Tier Buy-Through Order at ¶ 19 (grandfathering until October 5, 2002 cable systems that lack the technical capability to comply with the 1992 Cable Act's tier buy-through prohibition); House Committee on Energy and Commerce, H.R. Rep. No. 102-628, 102d Cong., 2d Sess. 109 ("In considering new [technical and signal quality standards], the Commission ... should, however, consider permitting reasonable phase-in periods so that operators and ultimately consumers may not necessarily be required to pay for replacing equipment in place prior to the end of its useful life"); Amendment of Section 94.65(e) of the Commission's Rules to Rechannelize the 2450-2483.5 MHz Band, 5 FCC Rcd. 4655, at ¶¶ 13-17 (1990) (grandfathering indefinitely existing equipment used by all Part 94 licensees prior to

these precedents would inform the Commission's decisions regarding digital video standards.

Such grandfathering of non-complying digital compression systems will be particularly appropriate given the fact that different video applications benefit from different compression schemes. For example, program distribution systems attempt to transmit the maximum amount of information in a bandwidth-limited channel. As such, they use techniques like differential coding to minimize redundancy of transmitted data. By contrast, recording systems attempt to support forward and reverse playback at multiple speeds and thus rely less on interframe techniques. It is unlikely that transmission and recording standards will converge.

C. Even If a Standardized Scrambling/Encryption System is Ultimately Adopted, the Security Circuitry Must Not Be Incorporated into Consumer Electronics Equipment

GIC is particularly troubled by ¶ 34's reference to the adoption of a standard security system. GIC concurs with those commenters in this proceeding who oppose the imposition of a national scrambling/encryption standard by the Commission. As these commenters correctly observe, a national scrambling/encryption standard would provide signal pirates with increased incentives to defeat the standard, since compromise of

rechannelization of frequency band by Commission); Amendment of Part 15 of the Commission's Rules Concerning Input Selector Switches Used in Conjunction with Cable TV Service, 2 FCC Rcd. 7231, at ¶¶ 27-31 (1987) (exempting from Commission's new technical standards all broadcast/cable input selector switches existing as of effective date of Report and Order).

the standard would provide access to all cable programming nationally.⁶⁹ Thus, national security standards in the cable industry could seriously undermine the ability of cable operators to protect their signals. By contrast, in a world of multiple scrambling/encryption techniques, if a signal pirate's efforts are "rewarded" by access to limited amounts of programming, incentives are significantly reduced to engage in the endeavor in the first place. Diversity in scrambling/encryption methods is itself a powerful security technique.

A national video security standard would have a similarly deleterious impact on subscriber privacy. The emerging information superhighway will transmit sensitive personal data -- such as banking transactions, health records, a consumer's viewing habits and buying predilections, etc. -- the confidentiality of which subscribers will want to preserve. In such an environment, the publication of a national video security standard would increase not only the ease with which programmers' intellectual property rights are transgressed but also the facility with which subscriber privacy is invaded.

Given the potential undesirable consequences of the imposition of national video security standards, it is not surprising that the Congress and the Commission have repeatedly refrained from adopting such standards. For example, while the Commission has studied the question of the standardization of

⁶⁹ See, e.g., TCI Reply Comments at 18-19; Compatibility Report at 38-39.

video scrambling/encryption on a number of occasions, in each instance it has found that imposition of such a standard would be contrary to the public interest.⁷⁰ Moreover, in deleting the House Amendment's directive to consider the "costs and benefits of requiring cable operators to adhere to technical standards for scrambling or encryption of video programming,"⁷¹ the Conference Committee clearly conveyed Congress' decision to avoid the imposition of such universal security standards on the cable industry.

Equally important, even if such security standards are eventually developed by standard-setting industry groups and thereafter prescribed by the Commission,⁷² in no event should the Commission authorize the incorporation of descramblers/decoders in consumer electronics equipment.

The two primary functions of a descrambler/decoder are

⁷⁰ See, e.g., Inquiry into Encryption Technology for Satellite Cable Programming, Report, 8 FCC Rcd. 2925, at ¶ 18 (1993); Inquiry into the Need for A Universal Encryption Standard for Satellite Cable Programming, Report, 5 FCC Rcd. 2710, at ¶ 69 (1990) ("The focus of this inquiry has been on whether a mandatory encryption standard would serve the public interest and we have decided that it would not"); Inquiry into the Scrambling of Satellite Television Signals and Access to Those Signals by Owners of Home Satellite Dish Antennas, Report, 2 FCC Rcd. 1669, at ¶¶ 7, 10, 52, 230 (1987) (same); Inquiry into the Scrambling of Satellite Television Signals and Access to Those Signals by Owners of Home Satellite Dish Antennas, Second Report, 3 FCC Rcd. 1202, at 13 (1988) (same).

⁷¹ See H.R. 4850, 102d Cong., 2d Sess. § 9(c)(2)(A). See also discussion at 31, supra.

⁷² See C3AG Supplemental Comments at 11 (recommending that the industries develop -- and the Commission then prescribe -- digital standards).

(1) managing keys and authentication and deciding which programs the customer is entitled to receive ("entitlement functions"); and (2) the actual descrambling/decoding of those programs the customer is entitled to receive. Some in the consumer electronics industry want to standardize the descrambling/decoding function and build the actual circuits into the TV set. Under this approach, the entitlement functions would take place outside the TV set. The Decoder Interface would pass key information out to the "entitlement" box, but video programming would stay within the TV set.

However, building the descrambling/decoding circuits into TV sets is too dangerous because it gives pirates a single technological design target to attack. Congress implicitly conveyed its recognition of this danger by deleting, in conference, a House amendment provision that would have required the Commission to consider "the potential for achieving economies of scale by requiring manufacturers of television receivers to incorporate technologies to achieve such compatibility in all television receivers."⁷³ Moreover, as the Commission is well aware, existence of a single security target in the home satellite industry, i.e., VideoCipher® II, contributed to its compromise.

Accordingly, if security standards are ultimately implemented, both the descrambling/decoding and the entitlement functions should be handled in a device external to the TV.

⁷³ H.R. 4850, 102d Cong., 2d Sess. § 9(c)(2)(B) (1992).

Under this approach, the Decoder Interface would pass scrambled/encrypted programming out to this device and descrambled/decoded programming back in.⁷⁴ Separating all security elements from the consumer electronics has significant benefits in the event the security is breached and must be replaced. By keeping the security system separate, the cable operator can replace/upgrade security without requiring replacement of the consumer electronics hardware by the consumer.

D. Any Video Standards the Commission Adopts Must be Applied Equally to All Video Distributors

Technology is in a dynamic phase where existing distribution networks are evolving and new networks are emerging. This growth will naturally create compatibility issues. If the Commission adopts a narrow approach to video standards that addresses only the cable-home electronics interface, it likely will confront compatibility problems over and over again with other distribution technologies. To avoid this result, the Commission should adopt a forward-looking approach which recognizes the need to foster compatibility across all media. Specifically, any video standards adopted by the Commission should be applied equally to all distribution media, including telephone company video dial tone service; TVRO (both C-band and Ku-band); DBS; MMDS at 2 GHz; SMATV; and LMDS at 28 GHz.

In addition to engendering new compatibility problems, the failure to impose identical standards requirements on all video

⁷⁴ GIC believes that this is the way the Decoder Interface is currently designed to function.

distribution media will improperly tilt the competitive playing field against the cable industry and in favor of its competitors, contrary to the Cable Act, longstanding Commission precedent, and sound public policy.

The Cable Act makes plain its preference for outcomes based on competition rather than regulatory fiat.⁷⁵ For example, the 1992 Cable Act grants all multichannel video programming distributors ("MVPDs") access to satellite programming in order to level the playing field among competing video distributors. However, if all MVPDs except for cable are free to use set-top boxes and to develop new video technologies and services unconstrained by Commission technical standards, these distributors may be able to use more secure scrambling/encryption systems and copy protection schemes that will afford them preferential access to programming (e.g., longer "windows" for first run movies), thereby undermining the level playing field that Congress sought to ensure.

⁷⁵ See, e.g., 1992 Cable Act § 2(a-b) (Commission should "rely on the marketplace, to the maximum extent feasible, to ... promote the availability to the public of a diversity of views and information through cable television and other video distribution media"); id. § 3(a)(2) (stating Congress' "preference for competition"); id. § 3(b)(2)(A) (instructing the Commission to "seek to reduce the administrative burdens on subscribers, cable operators, franchising authorities, and the Commission"). See also 47 U.S.C. § 521(6) (Commission should "minimize unnecessary regulation that would impose an undue economic burden on cable systems").

Similarly, the Commission itself has repeatedly expressed its goal of promoting competition, not individual competitors.⁷⁶ There is nothing unique about the current proceeding that would justify such a radical departure from this well-established regulatory precedent.

Finally, as a matter of sound public policy, similarly situated services should be subject to the same regulatory requirements. If the Commission finds that video standards will benefit consumers of "MVPD X," such standards should be deemed equally beneficial to consumers of "MVPD Y," where X and Y provide substitutable services. This principal of regulatory symmetry, which constitutes the cornerstone of the Administration's vision of the National Information Infrastructure,⁷⁷ should frame the Commission's regulatory approach to compatibility solutions in this proceeding. Effective competition can only flourish, and the attendant consumer benefits can only be achieved, if all delivery media are subject to any digital compression and/or security standards the Commission ultimately adopts.

⁷⁶ See, e.g., MTS and WATS Market Structure, 59 R.R.2d (P&F) 61, at ¶ 18 (1985 (noting FCC's longstanding commitment to the establishment of a level playing field for interstate toll competition)).

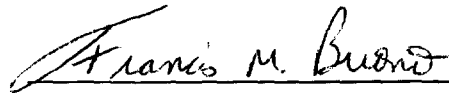
⁷⁷ See Remarks Prepared for Delivery by Vice President Al Gore, Royce Hall, UCLA, January 11, 1994, at 7 ("What we favor is genuine regulatory symmetry. That means regulation must be based on the services that are offered and the ability to compete -- and not on corporate identity, regulatory history or technological process").

CONCLUSION

Based on the foregoing, GIC respectfully urges the Commission to adopt compatibility solutions consistent with the comments herein.

Respectfully submitted,

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